# THE ECONOMICS OF **SUGAR BEET** PRODUCTION

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# THE ECONOMICS OF SUGAR BEET PRODUCTION

# IN ALBERTA

# 1990[1]

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**1 The authors would like to acknowledge the participation of the 38 sugar beet growers who willingly provided detailed information on their operations. The producers on-going cooperation is always appreciated.**

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## Table of Contents

1. INTRODUCTION ..... 1

2. OBJECTIVES ..... 1

3. STUDY SAMPLE ..... 1

4. METHOD OF ANALYSIS ..... 1

5. SUGAR BEET PRODUCTION IN ALBERTA, 1980-90 ..... 3

6. PRODUCTION COSTS AND RETURNS 1990 ..... 4
- a). Gross Returns ..... 4
- b). Variable Costs ..... 4
- c). Direct Cash Costs ..... 6
- d). Capital Costs ..... 6
- e). Total Costs ..... 10
- f). Net Returns ..... 10

7. COMPARISON OF COSTS/RETURNS, 1986-1990 ..... 10

8. SUMMARY ..... 11

## List of Figures

Figure 1: Variable Costs by Component ..... 6
Figure 2: Breakdown of Total Costs For Sugar Beets ..... 7

## List of Tables

Table 1: Sugar Beet Production in Alberta, 1980-90 ..... 3
Table 2: Sugar Beet Costs and Returns, All Enterprises ..... 5
Table 3: Sugar Beet Costs and Returns, Owned Land ..... 8
Table 4: Sugar Beet Costs and Returns, Rented Land ..... 9
Table 5: Comparison of Costs/Returns For Sugar Beets 1986-90 ..... 11
Table 6: Summary of Sugar Beet Costs and Returns, 1990 ..... 13

## 1. INTRODUCTION

The Production Economics Branch (PEB) has been monitoring the costs and returns of livestock and crop production in the province in an extensive way since the 1960's. These studies have been viewed as an important tool for assisting producers in their cropping decisions as well as for developing policies and programs for the different farm enterprises in the province and Canada. Where information gaps existed in other provinces, results from these studies have served as the basis to fill those gaps.

The PEB has been monitoring production costs and returns for the sugar beet industry since the early 1970's. The 1990 cost and return study is a continuing effort to monitor the sugar beet industry in the province. This years information, like previous years, will be used for a variety of reasons including tripartite negotiations. As such the methodology has been changed recently to better assist the formulation and updating of the tripartite model.

## 2. OBJECTIVES

The major objectives of the study are:

i. To develop production costs and returns for sugar beet production in Alberta.

ii. To assist sugar beet growers with farm budgeting and planning.

iii. To analyze economies of scale, machine use and input/output relationships for sugar beet production.

iv. To provide each study participant with an individual farm analysis along with group averages.

v. To provide an annual update for policy and program development and for extension personnel.

## 3. STUDY SAMPLE

The study sample for the 1990 study was originally selected from a list of producers who held sugar beet contracts. The random selection of the sample ensured a representative cross section of producers in the province. A total of 38 producers were surveyed personally to obtain detailed cost and return information. Participation was somewhat lower compared to 1989 where we surveyed 46 producers.

## 4. METHOD OF ANALYSIS

The raw data obtained from the study participants was reviewed for information gaps before entering into the computer for analysis. In the past years, a mainframe computer program was used to analyze both the individual farm reports as well as computing group averages. For the 1990 crop year, a new program (Paradox 3.5) was written for the micro computer. This has allowed us to make changes and updates in many of the cost allocations which were not possible with the mainframe (parts of the mainframe program were originally written in the 1970's). This program change has allowed us a faster turn around time between the survey date and the producer mail back date. In turn this allowed us to provide faster reconciliation and generating group averages. Next year, we expect the data analysis process to be much quicker as field testing and debugging were done on the 1990 production year.

**Fuel, Repairs and Machine Investment Allocations**

Farm records are usually kept on a whole farm basis. Many input costs are separable by enterprise type since crop management requires it (fertilizer and chemical use for example). Records on other important costs such as fuel and repairs are not usually kept on an enterprise level. The cost of production studies done by the Production Economics Branch have attempted to allocate costs on a crop by crop basis where farm records alone were insufficient. Sugar beet production requires intensive use of fertilizer, chemicals, fuel and equipment. Proper allocation of these factors of production is important if results are to be used with confidence.

Machine investment is allocated by the producer with the surveyor. Specialized sugar beet equipment is allocated 100% to the sugar beet enterprise. Other machinery which is used on both conventional crop as well as sugar beet land is allocated based on relative use. An engineering model was developed to study the time spent with various machines on a per acre basis[3]. These results were used to allocate machine investment between various enterprises on the farm (ie: grain vs sugar beet production).

Fuel use is another factor of production which must be allocated within the computer program since most producers do not keep separate records on a field by field basis. Results from the engineering model indicated that sugar beet production on average uses approximately 2.9 times the amount of fuel as compared to a conventional grain crop grown on irrigation[4].

The development of this model represented a significant change in allocation procedure from previous years. Earlier studies had allocated fuel and repair costs by the proportions of machine investment in each enterprise. This system would of course provide somewhat varying results since the age and current value of machinery used in each enterprise would impact fuel costs. We feel that this new allocation system for investment, fuel and repair costs should provide a more accurate estimation of production costs.

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3 In 1989 repair costs to sugar beet equipment were allocated 100% to the sugar beet enterprise and repair costs to all other machinery were allocated based on machine investment. However for 1990, repair costs are allocated based on machine use which is based on the engineering model explained above.

4 Results of the model also showed that fuel use on conventional crop production under irrigation uses 1.7 times the amount of fuel used for dryland crop production. Earlier studies allocated fuel costs based only on machine investment by enterprise.

## 5. SUGAR BEET PRODUCTION IN ALBERTA, 1980-90

During the last decade, contracted area under sugar beets in Alberta has fluctuated fairly widely. As a result of contractual difficulties there were no sugar beets grown in 1985.

Acreage has ranged from 29,983 in 1987 to 35,609 in 1980. In 1990, contracted area increased by about 9 percent over 1989. However, tonnage harvested increased by about 18 percent over the previous year due to higher yield per acre (7% increase) and increased acreage.

Prices have fluctuated quite dramatically over the same period of time. Prices ranged from about $31 per tonne to $67 per tonne, a 116% difference[5].

TABLE 1
SUGAR BEET PRODUCTION IN ALBERTA, 1980-1990[1]

| Year | Acres Contracted | Acres Harvested | Tonnage Harvested | Yield Per Acre | Dollars Per Tonne |
|---|---|---|---|---|---|
| 1980 | 35,609 | 33,771 | 524,251 | 15.52 | 66.99 |
| 1981 | 35,405 | 35,071 | 715,082 | 20.39 | 47.87* |
| 1982 | 32,161 | 30,502 | 474,866 | 15.57 | 55.57* |
| 1983 | 32,354 | 31,563 | 569,846 | 18.05 | 38.76 |
| 1984 | 32,075 | 28,830 | 513,180 | 17.80 | 31.49 |
| 1985 | ---------- NO SUGAR BEET PRODUCTION ---------- | | | | |
| 1986 | 30,054 | 28,493 | 596,122 | 22.92 | 39.25* |
| 1987 | 29,983 | 29,169 | 564,814 | 19.36 | 45.26* |
| 1988 | 29,575 | 28,109 | 540,405 | 19.22 | 41.16* |
| 1989 | 30,619 | 29,483 | 499,061 | 16.93 | 45.19 |
| 1990 | 33,299 | 32,664 | 590,238 | 18.07 | 36.29* |

(1) 66th Annual Report (1990), Alberta Sugar Beet Growers' Marketing Board, Lethbridge, Alberta.

(*) Price includes payments under the stabilization and tripartite programs.

5 All prices reported are in nominal dollars. In other words these were the actual prices received by the producers.

## 6. PRODUCTION COSTS AND RETURNS 1990

The 1990 sugar beet study sample comprised of 38 sugar beet growers, who provided detailed information on their operations. The sample was further divided into two groups to provide production costs and returns for sugar beets grown on owned and rented land.

**a). Gross Returns**

Table 2 presents production costs and returns for the entire study sample of 38 producers. Average yield reported in 1990 was 19.75 tonnes per acre with an average of 90.63 acres per farm. With a final price of $36.29 per tonne, the value of production was $717 per acre. When crop insurance receipts ($7.45/ac), miscellaneous receipts - rebates, patronage, and custom work ($11.88/ac) and other government program payments ($3.60/ac) were included, the average gross revenue per acre increased to $740 per acre or $37 per tonne. It should be noted that government program payments included only the Farm Income Adjustment Program, all other input programs have been netted out. A detailed breakdown of gross returns is given in Table 2.

**b). Variable Costs**

The cost information presented in table 2 and the following tables is based on seeded acres (not harvested acres). All of the costs are weighted averages and are expressed on a per acre and per tonne basis. Input costs (seed, fertilizer and chemicals) amounted to $135 per acre or $7 per tonne. Average fuel, utilities, and repair costs (machinery and buildings) were $133 per acre ($7/tonne).

Two of the other most significant cost items were custom work/specialized labour and operator labour, these accounted for $178 per acre or 32% of total variable costs. Figure 1 shows a graphical representation of variable costs on a per acre basis for the 1990 production year.

| Table 2: Sugar Beet Costs and Returns, 38 Enterprises | | |
|---|---|---|
| Acres Cropped 90.63<br>Yield Per Acre 19.75 tonnes | Per Acre | Per Tonne |
| A. GROSS RETURNS | $/acre | $/tonne |
| Crop Sales | 716.73 | 36.29 |
| Crop Insurance Receipts | 7.45 | |
| Miscellaneous Receipts | 11.88 | |
| Government Program Payments | 3.60 | |
| TOTAL | 739.66 | 37.45 |
| B. VARIABLE COSTS | | |
| Seed | 35.07 | |
| Fertilizer (Net of Rebate) | 40.79 | |
| Chemicals | 59.44 | |
| Hail/Crop Insurance | 11.02 | |
| Machine Fuel (Net of Rebate) | 36.00 | |
| Irrigation Fuel | 19.54 | |
| Repairs - Machinery* (Please see note P.6) | 59.10 | |
| Repairs - Buildings | 2.08 | |
| Utilities, Insurance & Overhead | 16.88 | |
| Association Fees & Research Levies | 11.63 | |
| Custom Work (On Farm Trucking Included) | 31.41 | |
| Specialized Labour | 35.25 | |
| Farm Share Custom Trucking To Factory | 21.46 | |
| Tripartite Stabilization Premium | 25.68 | |
| Operating Interest Paid | 4.45 | |
| Paid Labour | 31.81 | |
| Unpaid Family & Operator Labour | 110.98 | |
| TOTAL VARIABLE COSTS | 552.60 | 27.98 |
| C. DIRECT CASH COSTS<br>(Total Var. Costs - Unpaid Labour) | 441.62 | 22.36 |
| D. CAPITAL COSTS | | |
| Cash rent/Crop Share | 63.64 | |
| Taxes & Water Rates | 11.70 | |
| Equipment/Building Depreciation | 98.05 | |
| Paid Capital Interest | 44.51 | |
| TOTAL CAPITAL COSTS | 217.90 | 11.03 |
| E. TOTAL PRODUCTION COSTS (B+D) | 770.50 | 39.01 |
| . NET RETURNS | | |
| Return to Capital (Gross Margin) (A-B) | 187.06 | 9.47 |
| Return to Unpaid Labour (A-E + Unpaid Op. Labour) | 80.14 | 4.06 |
| Return to Investment (A-E + Paid Capital Int.) | 13.67 | 0.69 |
| Return to Equity (A-E) | -30.84 | -1.56 |
| INVESTMENT | | |
| Land and Buildings | 651.10 | |
| Machinery | 871.26 | |

Source: Production Economics Branch, Alberta Agriculture, (403)427-4005

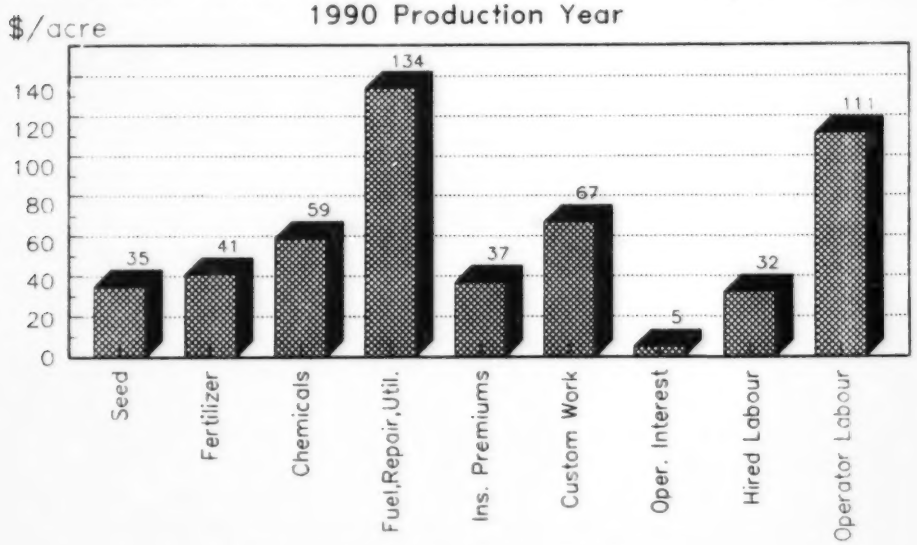
*** MACHINE REPAIR ALLOCATION METHOD USED IN TABLE 2.**

The 1990 repair costs for machinery presented in table 2 are based on the new method of repair costs allocated by the study participants. If these costs were calculated based on the previous methodology,i.e. the methodology agreed upon by the NTS Committee for sugar beets (sugar beet machine investment as a percentage of total farm machine investment), then the machinery repair costs for the 1990 production year would be $67.27/acre or $3.41/tonne as compared to $59.10/acre and $2.99/tonne with the new method.

FIGURE 1

Variable Cost Breakdown For Sugar Beets

1990 Production Year




Source: Production Economics Branch

**c). Direct Cash Costs**

For the purposes of this study cash costs do not include expenses associated with unpaid family and management labour. Total variable costs were $553 per acre with direct cash costs accounting for $442 of that total (Table 2).

**d). Capital Costs**

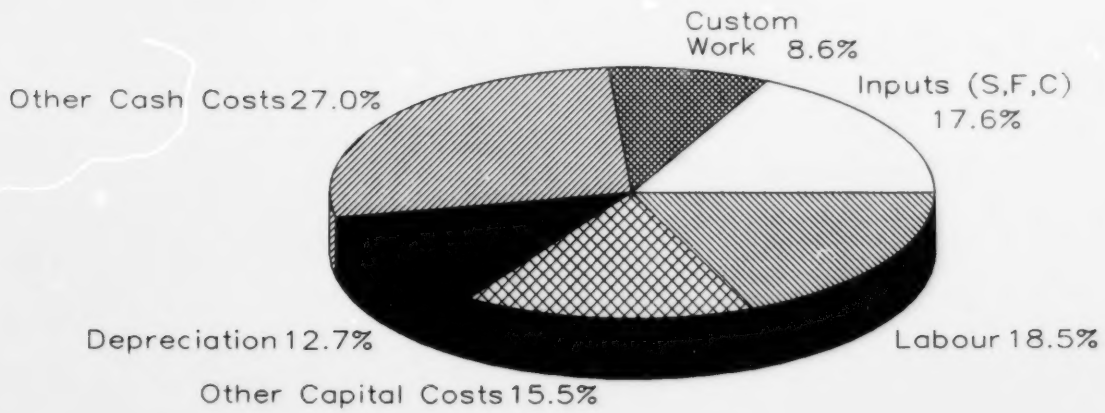
Capital costs are "fixed" overhead costs which are incurred regardless of the size of the enterprise or the output on a per acre basis of the enterprise. There are cash (cash rent, taxes, insurance, paid capital interest) and non-cash capital costs (depreciation).

Capital costs were 34% of total costs for sugar beets grown on rented land compared to 25% for sugar beets grown on owned land (Table 3). About one third of the producers on survey had sugar beets grown on rented land. Rental agreements included charges for the land, irrigation equipment and the sugar beet contract. Some producers rent land and irrigation equipment only since they hold their own contract. Average rental rates (a combination of the rental arrangements described above) were $168 per acre ($8.40/tonne) for the 13 producers who grew sugar beets on rented land (Table 4). This represents 21% of total costs for those producers. Taxes and water rates were $12 per acre or about $0.61 per tonne.

Equipment and building depreciation was calculated for specialized sugar beet equipment while other equipment was allocated and pro-rated based on use between sugar beets and the remaining farm enterprises. Equipment depreciation was calculated based on the current value of machinery. These costs were significant for a sugar beet enterprise, making up close to $100 per acre. Figure 2 shows the relative proportions of all costs in sugar beet production.

FIGURE 2

Breakdown of Total Costs For Sugar Beet Production, 1990




Source: Production Economics Branch

| Table 3: Sugar Beet Costs and Returns, Owned Land (25) | | | |
|---|---|---|---|
| Acres Cropped | 85.68 | Per | Per |
| Yield Per Acre | 19.65 tonnes | Acre | Tonne |
| A. GROSS RETURNS | | $/acre | $/tonne |
| Crop Sales | | 712.71 | 36.27 |
| Crop Insurance Receipts | | 10.00 | |
| Miscellaneous Receipts | | 10.63 | |
| Government Program Payments | | 3.60 | |
| TOTAL | | 736.94 | 37.50 |
| B. VARIABLE COSTS | | | |
| Seed | | 35.07 | |
| Fertilizer (Net of Rebate) | | 42.73 | |
| Chemicals | | 54.18 | |
| Hail/Crop Insurance | | 11.02 | |
| Machine Fuel (Net of Rebate) | | 38.99 | |
| Irrigation Fuel | | 22.57 | |
| Repairs - Machinery | | 61.37 | |
| Repairs - Buildings | | 2.13 | |
| Utilities, Insurance & Overhead | | 19.98 | |
| Association Fees & Research Levies | | 11.57 | |
| Custom Work (On Farm Trucking Included) | | 30.57 | |
| Specialized Labour | | 35.25 | |
| Farm Share Custom Trucking To Factory | | 21.46 | |
| Tripartite Stabilization Premium | | 25.54 | |
| Operating Interest Paid | | 3.86 | |
| Paid Labour | | 36.64 | |
| Unpaid Family & Operator Labour | | 118.76 | |
| TOTAL VARIABLE COSTS | | 571.69 | 29.10 |
| C. DIRECT CASH COSTS (Total Var. Costs - Unpaid Labour) | | 452.93 | 23.05 |
| D. CAPITAL COSTS | | | |
| Cash rent/Crop Share | | 0 | |
| Taxes & Water Rates | | 18.81 | |
| Equipment/Building Depreciation | | 105.41 | |
| Paid Capital Interest | | 65.49 | |
| TOTAL CAPITAL COST | | 189.71 | 9.66 |
| E. TOTAL PRODUCTION COSTS (B+D) | | 761.39 | 38.76 |
| F. NET RETURNS | | | |
| Return to Capital (Gross Margin) (A-B) | | 165.25 | 8.41 |
| Return to Unpaid Labour (A-E + Unpaid Op. Labour) | | 94.31 | 4.80 |
| Return to Investment (A-E + Paid Capital Int.) | | 41.04 | 2.09 |
| Return to Equity (A-E) | | -24.45 | -1.24 |
| INVESTMENT | | | |
| Land and Buildings | | 996.72 | |
| Machinery | | 933.71 | |

Source: Production Economics Branch, Alberta Agriculture, (403)427-4005

| Table 4: Sugar Beet Costs and Returns, Rented Land (13) | | |
|---|---|---|
| Acres Cropped 100.15<br>Yield Per Acre 19.93 tonnes | Per Acre | Per Tonne |
| A. GROSS RETURNS | $/acre | $/tonne |
| Crop Sales | 722.86 | 36.27 |
| Crop Insurance Receipts | 3.25 | |
| Miscellaneous Receipts | 13.94 | |
| Government Program Payments | 3.60 | |
| TOTAL | 743.65 | 37.31 |
| B. VARIABLE COSTS | | |
| Seed | 35.07 | |
| Fertilizer (Net of Rebate) | 37.61 | |
| Chemicals | 68.10 | |
| Hail/Crop Insurance | 11.02 | |
| Machine Fuel (Net of Rebate) | 31.09 | |
| Irrigation Fuel | 14.56 | |
| Repairs - Machinery | 55.38 | |
| Repairs - Buildings | 2.00 | |
| Utilities, Insurance & Overhead | 11.78 | |
| Association Fees & Research Levies | 11.71 | |
| Custom Work (On Farm Trucking Included) | 32.81 | |
| Specialized Labour | 35.25 | |
| Farm Share Custom Trucking To Factory | 21.46 | |
| Tripartite Stabilization Premium | 25.90 | |
| Operating Interest Paid | 5.42 | |
| Paid Labour | 23.86 | |
| Unpaid Family & Operator Labour | 98.18 | |
| TOTAL VARIABLE COSTS | 521.21 | 26.16 |
| C. DIRECT CASH COSTS<br>(Total Var. Costs - Unpaid Labour) | 423.02 | 21.23 |
| D. CAPITAL COSTS | | |
| Cash rent/Crop Share | 168.34 | |
| Taxes & Water Rates | 0.00 | |
| Equipment/Building Depreciation | 85.95 | |
| Paid Capital Interest | 9.99 | |
| TOTAL CAPITAL COSTS | 264.28 | 13.26 |
| E. TOTAL PRODUCTION COSTS (B+D) | 785.48 | 39.42 |
| F. NET RETURNS | | |
| Return to Capital (Gross Margin) (A-B) | 222.44 | 11.61 |
| Return to Unpaid Labour (A-E + Unpaid Op. Labour) | 56.35 | 2.83 |
| Return to Investment (A-E + Paid Capital Int.) | -31.84 | -1.60 |
| Return to Equity (A-E) | -41.83 | -2.10 |
| INVESTMENT | | |
| Land and Buildings | 82.49 | |
| Machinery | 768.52 | |

Source: Production Economics Branch, Alberta Agriculture, (403)427-4005

**e). Total Costs**

Total costs for sugar beet production in 1990 (average of all 38 enterprises) were $771 per acre ($39/tonne). Of this 57% were direct cash costs, 28% were capital costs and the remaining 15% were unpaid operator labour.

**f). Net Returns**

Section (F) of tables 2,3 and 4 presents returns to capital; unpaid labour; investment; and equity. The following procedures were used to calculate net returns.

**RETURN TO CAPITAL:**

Also known as gross margin is the difference between gross returns less variable costs. This is the amount of money left to pay for overhead costs (land rental, taxes and insurance), depreciation and capital interest and management. Average return to capital was $187 per acre ($9/tonne) for the total study sample.

**RETURN TO UNPAID LABOUR:**

Return to unpaid labour is gross returns less total production costs other than costs imputed for unpaid family and operator labour. Return to unpaid labour was $80 per acre ($4/tonne). These results are presented in table 2.

**RETURN TO INVESTMENT:**

Return to investment reflects the dollar (or percent) return to the total value of assets. This represents gross return less total production costs with the exception of interest payments on capital spending. Return to investment for sugar beet production was $14 per acre ($0.70/tonne) in 1990.

**RETURN TO EQUITY:**

Return to equity is gross returns less total production costs (including all capital costs). The amount of money left to pay for unpaid family labour and management was calculated at $-31 per acre ($-1.5/tonne).

## 7. COMPARISON OF COSTS/RETURNS, 1986-1990

Table 5 presents a five year comparison of costs and returns for sugar beet production in Alberta. Gross returns ranged from $827 per acre in 1989 to $906 per acre in 1988. Whereas total production costs ranged from $637 in 1986 to $819 per acre in 1987. In 1990 these costs were $771 per acre. Net returns to capital were the highest in 1986 at $462 per acre followed by $352 per acre in 1988. Returns to unpaid labour ranged from $80 per acre in 1990 to $288 per acre in 1986. The returns on investment and equity over the past five years are presented in table 5.

| Table 5<br>Comparison of Costs/Returns, 1986-90<br>($/acre) | | | | | |
|---|---|---|---|---|---|
| Year | 1986 | 1987 | 1988 | 1989 | 1990 |
| | | | $/acre | | |
| A. Gross Returns | 885 | 892 | 906 | 827 | 740 |
| B. Variable Costs | 423 | 558 | 554 | 508 | 553 |
| C. Direct Cash Costs | 382 | 458 | 452 | 428 | 442 |
| D. Capital Costs | 215 | 261 | 242 | 221 | 218 |
| E. Total Production Costs | 637 | 819 | 796 | 729 | 771 |
| F. Net Returns to: | | | | | |
| Capital | 462 | 334 | 352 | 319 | 187 |
| Unpaid Labour | 288 | 173 | 212 | 180 | 80 |
| Investment | 310 | 133 | 162 | 129 | 14 |
| Equity | 247 | 73 | 110 | 98 | -31 |

SOURCE: Production Economics Branch, Alberta Agriculture, (403)427-4005

## 8. SUMMARY

A summary of the 1990 sugar beets production costs and returns is presented in Table 6. As mentioned earlier, the sample size of 38 sugar beet producers was divided into two groups, i.e., beets produced on owned land (25) and rented land (13).

The average gross returns (crop sales, crop insurance receipts, miscellaneous receipts and government program payments) for the entire study sample amounted to $740 per acre ($37.45 per tonne) for the 1990 sugar beets crop. For beets produced on owned and rented land, gross returns were $737 per acre ($37.50/tonne) and $744 per acre ($37.31/tonne), respectively.

The average seed, fertilizer (net of rebate), and chemical costs for sugar beet production were estimated at $135 per acre ($6.85/tonne) for the study sample. These costs were $132 per acre ($6.72/tonne) for beets grown on owned land compared to $141 per acre ($7.06/tonne) for rented land. Hail/crop insurance, utilities, other insurance, association fees and research levies amounted to $40 per acre ($2.00/tonne) for the study sample; $43 per acre ($2.17/tonne) for beets produced on owned land and $35 per acre ($1.73/tonne) on rented land. The average cost for custom work, specialized labour and custom trucking was $117 per acre ($5.91/tonne) for the study sample, compared with $125 per acre ($6.36/tonne) for owned land and $103 per acre ($5.17/tonne) for rented land.

Tripartite stabilization premium payment was the same for all three groups, i.e., the study sample, owned and rented land. Average operating interest paid per acre was $4.45 per acre ($0.23/tonne), $3.86 per acre ($0.20/tonne), and $5.42 per acre ($0.27/tonne) for the study sample, owned land and rented land groups, respectively. The average labour cost

(paid and unpaid) was $143 per acre ($7.23/tonne) for the study sample. It was $155 per acre ($7.91/tonne) for beets grown on owned land and $122 per acre ($6.12/tonne) for rented land.

The average total variable cost for the 1990 sugar beet crop was estimated at $553 per acre ($28.00/tonne) for the study sample; $572 per acre ($29.00/tonne) for the owned land group and $521 per acre ($26.00/tonne) for beets produced on rented land. Average direct cash costs (total variable costs less unpaid labour) amounted to $442 ($22.36/tonne); $453 ($23.05/tonne); and $423 per acre ($21.23/tonne) for the study sample; owned group and rented land group, respectively. Details are presented in table 6.

The average capital costs were arrived at $218 per acre ($11.00/tonne) for all of the study participants. These were $190 per acre ($9.66/tonne) for the group who produced beets on owned land compared with $268 per acre ($13.26/tonne) for beets grown on rented land.

The average total production costs for the 1990 sugar beet crop (variable costs + capital costs) amounted to $771 per acre ($39.01/tonne) for the study sample. For beets grown on owned land, average production costs were estimated at $761 per acre ($38.76/tonne), compared to $785 per acre ($39.42/tonne) for beets grown on rented land (Table 6).

The average return to capital (gross margin) and unpaid labour for the 1990 sugar beet crop was $187 per acre ($9.47/tonne) and $80 per acre ($4.06/tonne) for the study sample, respectively. Returns to investment and equity were estimated at $14 and $-31 per acre, respectively, for the 38 sugar beet producers who participated in the 1990 study. The average return to capital for beets grown on owned land was $165 per acre ($8.41/tonne) and $222 per acre ($11.61/tonne) for beets grown on rented land. Return to unpaid labour was higher for beets produced on owned land at $94 per acre ($4.80/tonne) compared with $56 per acre ($2.83/tonne) for beets produced on owned land. Returns to investment and equity for the study sample and both groups (owned and rented land) are presented in table 6.

| TABLE 6: SUMMARY OF SUGAR BEET COSTS AND RETURNS, 1990 | | | | | | |
|---|---|---|---|---|---|---|
| | Study Sample | | Owned Land | | Rented Land | |
| Acres Cropped | 90.63 | | 85.68 | | 100.15 | |
| Yield Per Acre (tonnes) | 19.75 | | 19.65 | | 19.93 | |
| | $/acre | $/t | $/acre | $/t | $/acre | $/t |
| A. GROSS RETURNS | 739.66 | 37.45 | 736.94 | 37.50 | 743.65 | 37.31 |
| B. VARIABLE COSTS | | | | | | |
| Seed, Fert., Chem. | 135.30 | 6.85 | 131.98 | 6.72 | 140.78 | 7.06 |
| Miscellaneous[1] | 39.53 | 2.00 | 42.57 | 2.17 | 34.51 | 1.73 |
| Fuel and Repairs (Mach & Bldg) | 116.72 | 5.91 | 125.06 | 6.36 | 103.03 | 5.17 |
| Custom Work/Trucking Specialized labour | 88.12 | 4.46 | 87.28 | 4.44 | 89.52 | 4.49 |
| Tripartite Stabilization | 25.68 | 1.30 | 25.54 | 1.30 | 25.90 | 1.30 |
| Operating Interest | 4.45 | 0.23 | 3.86 | 0.20 | 5.42 | 0.27 |
| Labour (Paid & Unpaid) | 142.79 | 7.23 | 155.40 | 7.91 | 122.04 | 6.12 |
| TOTAL VARIABLE COSTS | 552.60 | 27.98 | 571.69 | 29.10 | 521.21 | 26.16 |
| C. DIRECT CASH COSTS (B - Unpaid Labour) | 441.62 | 22.36 | 452.93 | 23.05 | 423.02 | 21.23 |
| D. CAPITAL COSTS | 217.90 | 11.03 | 189.71 | 9.66 | 264.28 | 13.26 |
| E. TOTAL PROD'N COSTS | 770.50 | 39.01 | 761.39 | 38.76 | 785.48 | 39.42 |
| F. NET RETURNS | | | | | | |
| Return to Capital | 187.06 | 9.47 | 165.25 | 8.41 | 222.44 | 11.61 |
| Return to Unpaid Labour | 80.14 | 4.06 | 94.31 | 4.80 | 56.35 | 2.83 |
| Return to Investment | 13.67 | 0.69 | 41.04 | 2.09 | -31.84 | -1.60 |
| Return to Equity | -30.84 | -1.56 | -24.45 | -1.24 | -41.83 | -2.10 |

[1] Miscellaneous costs include; hail/crop insurance, utilities, other insurance, Board fees and research levies.